

## CLAIMS

1. A system for verifying operation of an alarm in a vented enclosure, comprising:  
an enclosure from which gas may be exhausted;  
a flow control device that controls a flow rate of gas removed from the enclosure;  
5 an alarm that provides an indication when a flow rate of gas being removed from the enclosure is below or above a threshold flow rate; and  
an alarm verification device that, in response to user input to test operation of the alarm, causes a signal that the flow rate of gas being removed from the enclosure is below or above the threshold flow rate.  
10
2. The system of claim 1, wherein the alarm verification device is used to adjust the flow rate to a known value below or above the threshold flow rate.
3. The system of claim 2, wherein the alarm verification device is used to adjust  
15 the flow rate to the known value without requiring manual measurement of a flow of gas removed from the enclosure.
4. The system of claim 2, wherein the alarm verification device is used to adjust the flow rate to the flow rate to the known value without requiring actual measurement of flow.  
20
5. The system of claim 1, wherein the alarm verification device includes a display that indicates when the signal indicates the flow rate is below or above the threshold flow rate.
6. The system of claim 1, wherein the alarm verification device includes a damper  
25 adjustment mechanism that adjusts a position of a restrictor element in a duct to control flow of gas exhausted from the enclosure.
7. The system of claim 6, wherein the alarm verification device includes a sensor  
that detects a position of the restrictor element in the duct.  
30

8. The system of claim 1, wherein the alarm verification device outputs a signal that overrides normal control of the airflow control device and causes the air flow control device to set the flow rate to a known value below or above the threshold flow rate.

5 9. The system of claim 8, wherein the air flow control device includes a damper having a movable restrictor element and an actuator that causes movement of the restrictor element to adjust flow through the damper, and wherein the signal output by the verification device overrides normal control of the actuator.

10 10. The system of claim 1, wherein the alarm is activated based on a signal indicating a position of a damper in the air flow control device.

11. The system of claim 1, wherein the alarm is activated based on one of a measured pressure differential and a detection of actual flow of gas being removed from the  
15 enclosure.

12. An apparatus for verifying operation of an alarm in a vented enclosure, comprising:

a flow control device adapted to control a flow rate of gas flowing through a conduit  
20 from a vented enclosure; and

an alarm verification device adapted to cause, in response to input from a user to test an alarm, generation of a signal that indicates the flow rate through the conduit is at a known value less than or greater than the threshold flow rate, the signal causing the alarm to be activated when operating normally.

25 13. The apparatus of claim 12, wherein the alarm verification device adjusts the flow rate to the known value that is below or above the threshold flow rate.

14. The apparatus of claim 12, wherein the alarm verification device is used to  
30 adjust the flow rate to the known value without requiring manual measurement of a flow of gas removed from the enclosure.

15. The apparatus of claim 12, wherein the alarm verification device is used to adjust the flow rate to the known value without requiring actual measurement of flow.

5 16. The apparatus of claim 12, wherein the alarm verification device includes a display that indicates when the flow rate is indicated to be at the known value below or above the threshold flow rate.

10 17. The apparatus of claim 12, wherein the alarm verification device includes a damper adjustment mechanism that adjusts a position of a restrictor element in a duct to control flow of gas exhausted from the enclosure.

18. The apparatus of claim 17, wherein the alarm verification device includes a sensor that detects a position of the restrictor element in the duct.

15 19. The apparatus of claim 12, wherein the alarm verification device outputs a signal that overrides normal control of the flow control device and causes the flow control device to set the flow rate below or above the threshold flow rate.

20 20. The apparatus of claim 19, wherein the flow control device includes a damper having a movable restrictor element and an actuator that causes movement of the restrictor element to adjust flow through the damper, and wherein the signal output by the verification device overrides normal control of the actuator.

25 21. The apparatus of claim 12, wherein the alarm is activated based on a position of a damper in the flow control device.

30 22. The apparatus of claim 12, wherein the alarm is activated based on one of a measured pressure differential and a detection of actual flow of gas being removed from the enclosure.

23. An air flow control apparatus, comprising:  
a damper element movable in a conduit to adjust a flow of gas through the conduit;  
a controller arranged to control a position of the damper element to maintain flow  
through the conduit at a setpoint value; and

5 an alarm verification device arranged to override control of the damper position by the  
controller and position the damper element to set air flow through the conduit at a known value  
that is less than or greater than a threshold value, flow less than or greater than the threshold  
value being less than or greater than the setpoint and causing an alarm to be activated.

10 24. The apparatus of claim 23, wherein the alarm verification device adjusts the air  
flow to the known value without requiring actual measurement of flow.

25. The apparatus of claim 23, wherein the alarm verification device adjusts the  
flow rate to the known value without requiring manual measurement of the air flow.

15 26. The apparatus of claim 23, wherein the alarm verification device includes a  
display that indicates when the air flow is established at the known value.

27. The apparatus of claim 23, wherein the alarm verification device includes a  
20 damper adjustment mechanism that adjusts a position of the damper element to control the air  
flow.

28. The apparatus of claim 27, wherein the alarm verification device includes a  
sensor that detects a position of the damper element.

25 29. The apparatus of claim 23, wherein the alarm verification device outputs a  
signal that overrides normal control of the damper element by the controller and causes the air  
flow to be set at the known value.

30. The apparatus of claim 29, wherein the controller includes an actuator that causes movement of the damper element to adjust flow through the conduit, and wherein the signal output by the verification device overrides normal control of the actuator.

5 31. The apparatus of claim 23, wherein the alarm is activated based on a position of the damper element.

32. The apparatus of claim 23, wherein the alarm is activated based on a measured pressure differential.

10

33. The apparatus of claim 23, wherein the alarm is activated based on a detection of actual flow of air in the conduit.

34. A method for verifying the operation of an alarm for a vented enclosure,  
15 comprising:

providing an enclosure from which gas may be exhausted;

providing an air flow control device that normally controls a flow rate of gas removed from the enclosure to a setpoint value;

20 providing an alarm that provides an indication when a flow rate of gas being removed from the enclosure is below or above a threshold flow rate; and

adjusting a flow rate of gas being removed from the enclosure to a known value below or above a threshold flow rate without manually measuring air flow to test the alarm.